DUTCH MARINE OBSERVATIONS

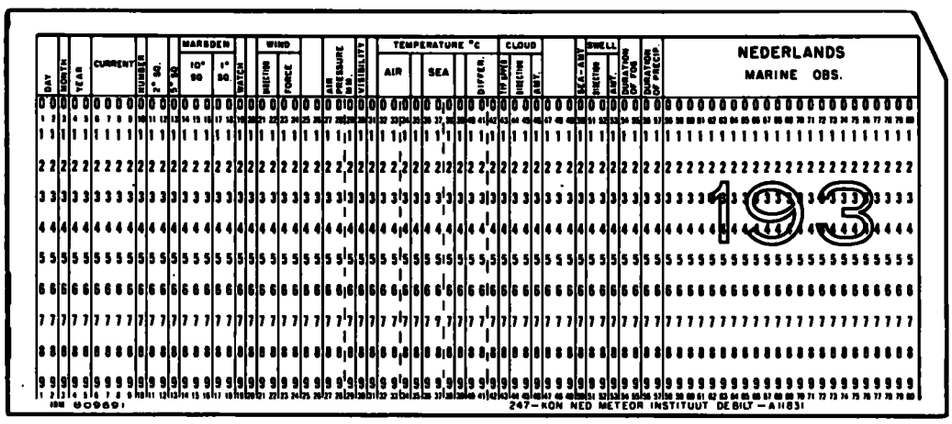
This reference manual was prepared for use with the observations from the Dutch Marine Deck. Reproduction for our usage was done at the Netherlands Meteorological Institude at DeBilt on IBM electroplate #All831. The cards were obtained as part of an expanding interest in marine climatology to supplement the German and British Marine Decks in the earlier years. Current make-over is being accomplished on a slightly revised card form, IBM electroplate #809691.

Card volume for this deck is as follows:

N. Atlantic and North Sea	2,352,000
S. Atlantic Ocean	753,000
Pacific Ocean	634,000
Indian Ocean	1,872,000
Red Sea	427,000
Mediterranean and Black Seas	563,000
Total	6,601,000

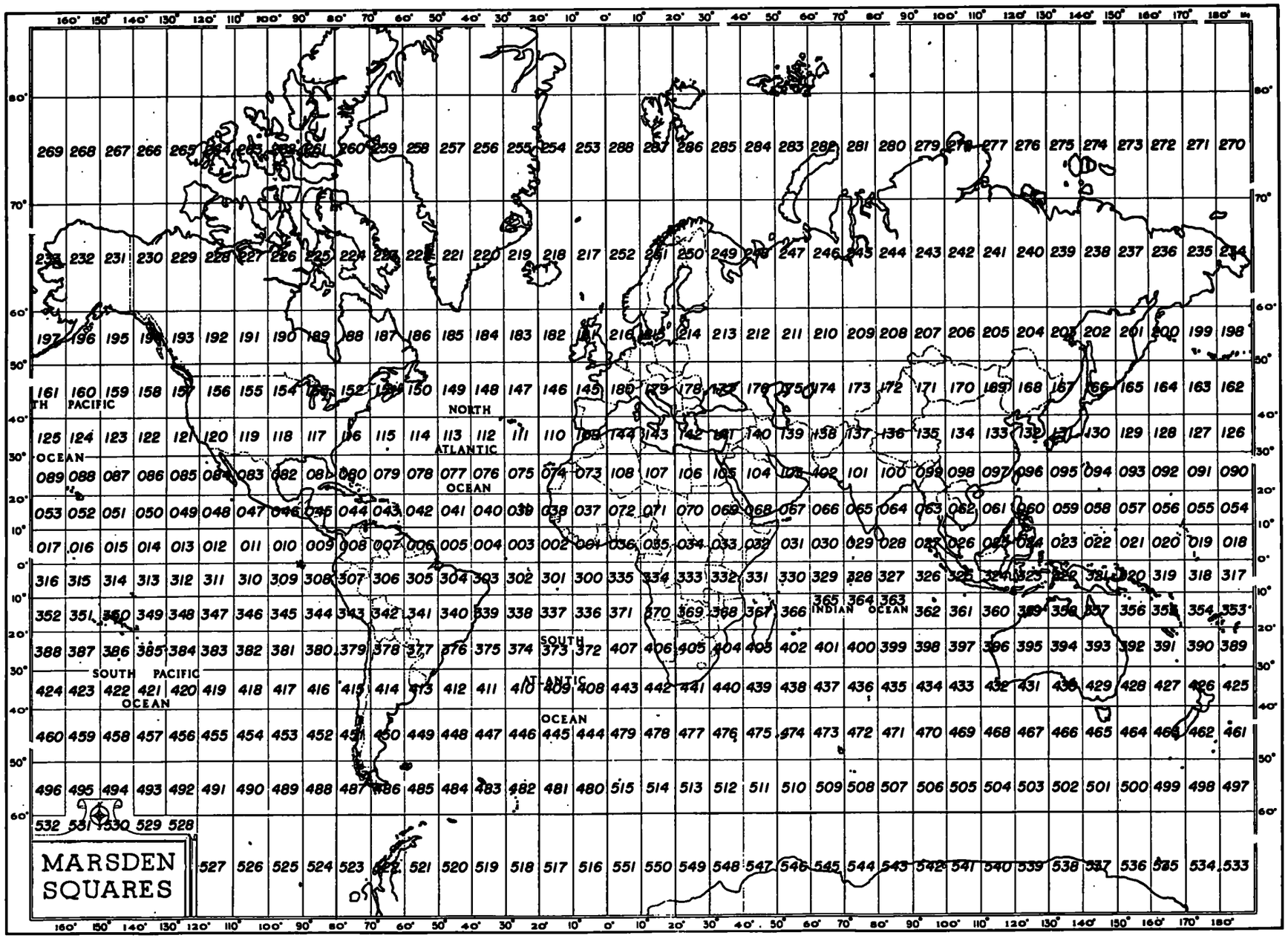
Unusual features of the deck include observations of current (set and drift) and observations of duration of fog and precipitation.

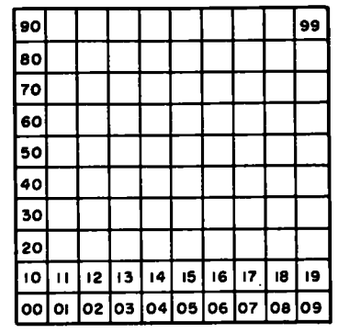
Meteorological elements observed include wind direction and force, sea level pressure, visibility, air and sea temperatures, high cloud type, cloud direction, total cloud amount, sea amount, swell direction and swell amount.

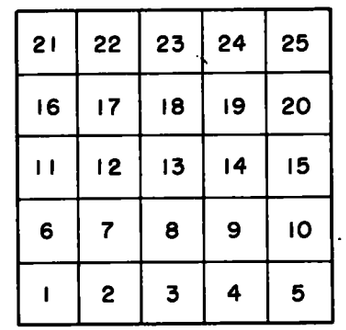


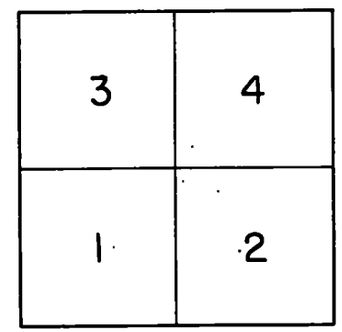
REFERENCE MANUAL

193 DUTCH MARINE OBS









SQUARES ARE ALWAYS ORIENTED SO THAT THE LOWEST NUMBER IS NEAREST THE INTERSECTION OF THE GREENWICH MERIDIAN AND THE EQUATOR.

30 August 1954

CARD CONTENT					SOURCE CONTENT	
Columns	Item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
1-2	Day	01-31	Day of month			All times in this card deck are in ship's or local standard time.
		Blank	Unknown			
3	Month	1-9	January - September			
		0	October			
		X/1	November			
		Y/2	December			
		Blank	Unknown			
4-5	Year	54-38	1854 to 1938			Some Y punches occur in column 4 but these are for Dutch use.
		Blank	Unknown			
6-7	Current (Set)	00	No Current	1854 through 1930 only.		Direction toward which the current is moving.
		02	North Northeast			
		04	Northeast			
		06	East Northeast			
		08	East			
		10	East Southeast			
		12	Southeast			
		14	South Southeast			
		16	South			
		18	South Southwest			
		20	Southwest			
		22	West Southwest			
		24	West			
		26	West Northwest			
		28	Northwest			
		30	North Northwest			
		32	North			
		99	No current	1931 through 1938 only.		
		Blank	Unknown			
8-9	Current (Drift)	00-98	0 to 98 nautical miles per day			
		99	≥ 99 nautical miles per day			
		Blank	Unknown			
10	Number	Y	Indicator	Cards have barometric pressure, air temperature and sea water temperature punched.		
		X	Indicator	Cards do not have duration of fog or precipitation punched.		
		1	Indicator	For Dutch use only. All cards punched.		
11-12	2° Square	01-25	Ship located in 2° square designated	See diagram showing 2° subdivisions of a Marsden square		A Dutch variant of the Marsden square system whereby the 1° squares of a 10° square are combined in groups of four so that 2° square 01 is composed of 1° squares 00, 01, 10, 11, etc.
		Blank	Unknown			
13	5° Square	1-4	Ship located in 5° square designated	See diagram showing 5° subdivisions of a Marsden square.		The lowest numbered 5° square is generally the quarter of a 10° square nearest to the equator and the Greenwich Meridian. Y punches in column 13 are for Dutch use only.
		Blank	Unknown			
14-16	10° Square	001-999	Ship located in 10° square designated	See map showing numbering used to designate a square having 10° of latitude and 10° of longitude.		The Marsden system of assigning numbers to a "square" having dimensions of 10° of latitude and 10° of longitude begins at the Northwest corner of the intersection of the equator and the prime meridian, thus square 001 extends from the equator to 10°N latitude and from Greenwich to 10°W longitude. The numbering continues in a circumpolar manner proceeding westward through square 036. Square 037 is directly north of square 001 and the process is repeated for this latitude band. Squares in the southern hemisphere begin with square 300 which is directly south of square 001, and are numbered consecutively in a westward circumpolar manner by progesssively higher bands of 10° of latitude. One degree squares are numbered in tens position by the 1° of latitude and in the units position by the 1° of longitude within the 10° square.
		Blank	Unknown			
17-18	Sub-Square (1° Square)	00-99	Ship located in 1° square designated	See diagram showing 1° subdivision of a Marsden square.		
		Blank	Unknown			

CARD CONTENT					SOURCE CONTENT	
Columns	Item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
19	Watch	1	4:00 a.m.	The hour at which the observation was made.		Code 6 is punched for midnight or 00 hours of the day beginning.
		2	8:00 a.m.			
		3	Noon			
		4	4:00 p.m.			
		5	8:00 p.m.			
		6	Midnight			
		Blank	Unknown			
20	Blank		Not used			
21-22	Wind Direction	00	Calm	For the years 1854 through 1930.		
		02	North Northeast			
		04	Northeast			
		06	East Northeast			
		08	East			
		10	East Southeast			
		12	Southeast			
		14	South Southeast			
		16	South			
		18	South Southwest			
		20	Southwest			
		22	West Southwest			
		24	West			
		26	West Northwest			
		28	Northwest			
		30	North Northwest			
		32	North			
		99	Calm	For the years 1931 through 1938.		
		Blank	Unknown			
23-24	Wind Force	00	Calm			According to Beaufort scale.
		01	Light airs			
		02	Light breeze			
		03	Gentle breeze			
		04	Moderate breeze			
		05	Fresh breeze			
		06	Strong breeze			
		07	High wind (moderate gale)			
		08	Gale (fresh gale)			
		09	Strong gale			
		10	Whole gale			
		11	Storm			
		12	Hurricane			
		Blank	Unknown			
25-26	Blank		not used			
27-29	Air Pressure mm.	000-999	700.0 to 799.9 mm.	Tens, units, and tenths of millimeters omitting initial 7.		Corrected for temperature and reduced to mean sea level but not corrected for gravity.
		Blank	Unknown			
30	Visibility	0	Dense fog	Visibility < 50 meters.		Visibility observation began in 1922.
		1	Thick fog	Visibility 50 to 200 meters.		
		2	Fog	Visibility 200 to 500 meters.		
		3	Moderate fog	Visibility 500 to 1000 meters (1/2 nautical mile).		
		4	Thin fog or mist	Visibility 1/2 to 1 nautical mile.		
		5	Visibility poor	Visibility 1 to 2 nautical miles.		
		6	Visibility moderate	Visibility 2 to 5 nautical miles.		
		7	Visibility good	Visibility 5 to 10 nautical miles.		
		8	Visibility very good	Visibility 10 to 30 nautical miles.		
		9	Visibility excellent	Visibility > 30 nautical miles.		

CARD CONTENT					SOURCE CONTENT	
Columns	Item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
30	Visibility (Continued)	Y	Indicator	Fog patches have been observed during the watch (Y overpunched).		
		Blank	Unknown			
31	Blank		Not used			
32-34	Air Temperature	000-499	00.0°C to 49.9°C	Tens, units and tenths of degrees centigrade.		
		500-999	-00.0°C to -49.9°C			
		Blank	Unknown			
35	Blank		Not used			
36-38	Sea Water Temperature	000-499	00.0°C to 49.9°C	Tens, units and tenths of degrees centigrade.		
		500-999	-00.0°C to -49.9°C			
		Blank	Unknown			
39	Indicator Air-Sea Temperature Difference	X	Sea temperature greater than air temperature			Relatively few observations of this nature are from the original Dutch source but have been computed from the two values given for most of the North Pacific. The rough area in which computations have been made are from 10° south latitude to 70° north latitude and from 100° West longitude through the 180th Meridian to 100° East longitude.
		Blank	Air temperature greater than sea temperature	With columns 40-42 punched.		
		Blank	Unknown	With columns 40-42 blank.		
40-42	Air-Sea Temperature Difference	000-999	00.0°C to 99.9°C	Absolute value of air temperature minus sea temperature to tens, units, and tenths of degrees.		
		Blank	Unknown			
43	Upper Cloud Type	1	Cirrus			
		2	Cirrostratus			
		3	Cirrocumulus			
		4	Altocumulus			
		5	Altostratus			
		Blank	Unknown			Cloud type left blank when cloud direction was missing.
44-45	Cloud Direction	00	Calm	For the years 1854 through 1930.		Direction from which cloud is moving.
		02	North Northeast			
		04	Northeast			
		06	East Northeast			
		08	East			
		10	East Southeast			
		12	Southeast			
		14	South Southeast			
		16	South			
		18	South Southwest			
		20	Southwest			
		22	West Southwest			
		24	West			
		26	West Northwest			
		28	Northwest			
		30	North Northwest			
		32	North			
		99	Calm	For the years 1931 through 1938.		
		Blank	Unknown			When unknown or not observed, the entire cloud field was generally left blank.
46	Cloud Amount	0	No clouds	Clear sky		
		1	.1 of the sky covered			
		2	.2 of the sky covered			
		3	.3 of the sky covered			
		4	.4 of the sky covered			
		5	.5 of the sky covered			
		6	.6 of the sky covered			
		7	.7 of the sky covered			
		8	.8 of the sky covered			
		9	.9 of the sky covered			
		Y	Sky completely covered	Overcast		
		Blank	Unknown			

CARD CONTENT					SOURCE CONTENT	
Columns	Item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
47-49	Blank		Not used			
50	Sea Amount	0	Calm	Height of wave, crest to trough 0 feet.		Observations of sea amount began in 1883. Sea amount is the equivalent of the 1929 Copenhagen International Code, symbol S, state of sea. The Dutch code is uniform with the "Douglas" code. The Dutch interpretation of code figure 9, however, indicates a sea that is higher than codes 7 or 8. The code is progressive throughout and a confused but not extremely high sea (as, for instance, the sea in or near the center of a typhoon) is not coded as 9.
		1	Smooth	Height of wave, crest to trough < 1 foot.		
		2	Slight	Height of wave, crest to trough 1-3 feet.		
		3	Moderate	Height of wave, crest to trough 3-5 feet.		
		4	Rough	Height of wave, crest to trough 5-8 feet.		
		5	Very rough	Height of wave, crest to trough 8-12 feet.		
		6	High	Height of wave, crest to trough 12-20 feet.		
		7	Very high	Height of wave, crest to trough 20-40 feet.		
		8	Precipitous	Height of wave, crest to trough > 40 feet.		
		9	Confused	See "Reporting and Coding Practices."		
		Blank	Unknown			
51-52	Swell Direction	00	No swell or slight swell the direction of which was not observed, or confused swell	For the years 1922 through 1930.		Direction from which swell comes. Observation of swell began in 1922.
		02	North Northeast			
		04	Northeast			
		06	East Northeast			
		08	East			
		10	East Southeast			
		12	Southeast			
		14	South Southeast			
		16	South			
		18	South Southwest			
		20	Southwest			
		22	West Southwest			
		24	West			
		26	West Northwest			
		28	Northwest			
		30	North Northwest			
		32	North			
		33	Confused swell			
		99	No swell	For the years 1931 through 1938.		
		Blank	Unknown			
53	Swell Amount	0	No swell or slight swell	And sea smooth to moderate.		International code of 1921 used prior to 1931.
		1	Moderate swell			
		2	Heavy swell			
		3	Long low swell			
		4	Confused swell			
		5	No swell of slight swell	And sea rough.		
		6	Moderate swell			
		7	Heavy swell			
		8	Long low swell			
		9	Confused swell			
		0	No swell			International code of 1929 subsequent to 1930.
		1	Low swell	Short or average length.		
		2	Low swell	Long		
		3	Moderate swell	Short		
		4	Moderate swell	Average length		
		5	Moderate swell	Long		
		6	Heavy swell	Short		
		7	Heavy swell	Average length		
		8	Heavy swell	Long		

CARD CONTENT					SOURCE CONTENT	
Columns	Item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
53	Swell Amount (Continued)	9	Confused swell			
		Blank	Unknown			
54-55	Duration of Fog	01-16	1 to 16 quarters of an hour per watch			
		Blank	No fog observed			
56		Y	Indicator	Thunderstorm observed during the watch (Y overpunched).		
57		Y	Indicator	Hail observed during the watch (Y overpunched).		
		X	Indicator	Snow observed during the watch (X overpunched).		
56-57	Duration of Precipitation	01-16	1 to 16 quarters of an hour per watch			
		Blank	No precipitation observed			
58-80	Blank		Not used			